

## **CHAPTER 2 COMPLIANCE DETERMINATION**

The Regional Water Quality Control Boards (RWQCBs) establish effluent limitations and determine compliance in accordance with applicable State and Federal regulations concerning waste discharge requirements (WDRs), including National Pollution Discharge Elimination System (NPDES) permits. The four components used in determining compliance with effluent limitations for chemical-specific criteria are: (1) compliance schedules; (2) interim requirements; (3) monitoring and reporting requirements; and (4) reporting levels. When immediate compliance with Federal or State water quality standards is not feasible in certain circumstances, a schedule for compliance may be warranted. The RWQCBs have the authority to require dischargers to monitor and report pollutant levels as a part of waste discharge requirements. The information generated by the monitoring and reporting requirements of NPDES permits and waste discharge requirements are then used to determine compliance with effluent limitations. To assist the RWQCBs in evaluating compliance, reporting levels, levels at which the amount of pollutants in a given sample can be reliably quantified, are established.

### **CHAPTER 2.1 COMPLIANCE SCHEDULES**

#### **I. PRESENT STATE POLICY**

There is no current statewide policy allowing compliance schedules in NPDES permits for discharges to inland surface waters, oceans, enclosed bays, or estuaries. However, the San Francisco Bay and Central Valley basin plans contain compliance schedule provisions applicable to NPDES permittees. Compliance schedules are also permissible in WDRs that are not issued as NPDES permits.

#### **II. ISSUE DESCRIPTION**

A compliance schedule, as specified in permits, refers to a designated timetable of interim dates for implementing required actions to comply with water quality standards and effluent limitations based on the standards.

State regulations authorize the SWRCB and RWQCBs to include time schedules in WDRs for discharges not required to be regulated under an NPDES permit (CCR, Title 23, §2231). No maximum time limit is specified, although the time schedule should "assure the most rapid compliance" (CCR, Title 23, §2231).

No statewide policy currently allows compliance schedules in NPDES permits.<sup>1</sup> In the absence of authorization, compliance with effluent limitations implementing water quality

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<sup>1</sup> For NPDES permits, a schedule of compliance is defined as "a schedule of remedial measures included in a 'permit', including an enforceable sequence of interim requirements (for example, actions, operations, or milestone events) leading to compliance with the CWA and regulations" (40 CFR 122.2).

standards in permits must be immediate.<sup>2</sup>

Although the five-year term of the NPDES permit has generally been regarded as the maximum limit for compliance schedule length, the U.S. EPA continues to believe that compliance schedules of three years or less should be sufficient to allow facilities to meet new or revised WQBELs in most cases (U.S. EPA 1996). This duration is consistent with CWA provisions, including Sections 301(b)(2), 304(l) and 402(p). For example, Section 301(b)(2)(C)-(F) provides that various technology-based effluent limitations shall be complied with as expeditiously as possible but no later than three years after effluent guidelines are promulgated. Section 304(l) requires that sources comply with individual control strategies (water quality-based requirements) within three years. Similarly, Section 402(p) mandates that permits for municipal and industrial stormwater discharges provide for compliance as expeditiously as practicable, but in no event later than three years after permit issuance.

Under the Great Lakes Guidance (U.S. EPA 1995), the U.S. EPA provided for Great Lakes State and Tribal adoption of compliance schedules for WQBELs for existing discharges only. The guidance also authorizes schedules which exceed the term of the permit up to a maximum schedule length of five years in limited situations, and requires interim limits with specific compliance dates where compliance schedules exceed one year from the date of permit issuance.

The San Francisco Bay Basin Plan allows inclusion of compliance schedules of up to 10 years in NPDES permits to achieve compliance with new water quality objectives or standards. The San Francisco Bay RWQCB's primary goal in setting compliance schedules is to promote the completion of source control and waste minimization measures, including water reclamation. To accomplish this goal, the basin plan sets forth the following minimum requirements for justifying compliance schedules: (a) submission of results of a diligent effort to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control efforts currently underway or completed, including compliance with a pollution prevention program as described in the basin plan; (c) a proposed schedule for additional source control measures or waste treatment; and (d) a demonstration that the proposed schedule is as short as possible.

The San Francisco Bay Basin Plan further requires that implementation of source control measures to reduce pollutant loadings to the maximum extent practicable be completed as soon as possible, but in no event later than four years after new objectives or standards take effect. Implementation of any additional measures to comply with effluent limitations must

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<sup>2</sup> See *In re Star-Kist Caribe, Inc.* (NPDES Appeal No. 88.5 (May 26, 1992)). This opinion interpreted Section 301(b)(1)(C) of the CWA, which establishes a deadline of no later than July 1, 1977 for compliance with effluent limitations necessary to meet applicable water quality standards. In light of this requirement, the opinion held that NPDES permits may contain compliance schedules beyond July 1, 1977 to meet water quality-based effluent limitations (WQBELs) only if two requirements are met: (1) the effluent limitation is based on a post-July 1, 1977 water quality standard, or a new or revised interpretation of a pre-July 1, 1977 standard; and (2) the applicable standard or implementing state regulations explicitly authorize schedules of compliance.

be completed as soon as possible, but in no event later than 10 years after new objectives or standards take effect. The basin plan also states that the issuance of a permit containing a compliance schedule should not result in a violation of any applicable requirement of the federal CWA or the California Water Code, including any applicable CWA statutory deadlines.

The Central Valley Basin Plan provides that, where the RWQCB determines it is infeasible to achieve immediate compliance with a State objective or Federal criterion adopted after September 25, 1996, or an effluent limitation based on the objective or criterion, a schedule of compliance may be established in the NPDES permit. The schedule of compliance must include a time schedule for completing specific actions that demonstrate reasonable progress toward the attainment of objectives or criteria and a final compliance date, based on the shortest practicable time required to achieve compliance. In no event shall an NPDES permit include a schedule of compliance that allows more than 10 years (from the date of adoption of the objective or criterion) for compliance with water quality objectives, criteria, or effluent limitations based on the objectives or criteria.

For discharges that occur within the regions of the seven RWQCBs that have not yet authorized compliance schedules in their respective basin plans, immediate compliance with WQBELs is required. Without authorized compliance schedules in the standards or regulations that implement the standards, a schedule for compliance can only be issued in an enforcement order (e.g., cease and desist order).

The Permitting and Compliance Issues Task Force recommended a 15-year compliance schedule for NPDES permits or other WDRs. The task force recommended that any time a new numerical interpretation of a narrative or numerical objective was placed into a permit, a new compliance period begins. It was further recommended that the RWQCB, with a good cause (e.g., when site-specific objectives are being developed), may adopt a basin plan amendment with a different compliance deadline. This recommendation could be addressed through an exception to the Policy (see Chapter 5.5).

The CTR is proposing to authorize up to a 5-year compliance schedule for existing NPDES permits only. This means that the discharger's opportunity to obtain a compliance schedule occurs when the existing permit for that discharge is issued, reissued, or modified, whichever is sooner. Compliance schedules cannot be extended to an indefinite point of time in the future because no final compliance date for WQBELs based upon this rule can be more than ten years from the effective date of the CTR. Any possible delays in reissuing expired permits cannot indefinitely extend the period of time during which a compliance schedule is in effect. Ten years allows for inclusion of the single maximum five-year compliance schedule in a permit which is reissued five years after the effective date of the CTR. Compliance schedules will not be allowed for new permitted discharges; therefore, immediate compliance will be required. The CTR will also require interim limits with specific compliance dates where compliance schedules exceed one year from the date of permit issuance. The proposed CTR is not intended to supersede existing RWQCB basin plan provisions.

The five alternatives presented below for compliance schedule lengths provide options based on current Federal or State regulations and task force recommendations.

### **III. ALTERNATIVES FOR SWRCB ACTION**

**Alternative 1.** No Action. The CTR is providing an authorizing compliance schedule of up to five years for use by the RWQCBs. However, the CTR will allow compliance schedule provisions in existing basin plans to remain in effect. Therefore, the Central Valley and San Francisco Bay basin plans' 10-year compliance schedule provisions would continue in effect.

**Alternative 2.** Adopt a compliance schedule of up to 3 years from the date of adoption of the proposed Policy for implementing the CTR criteria. As described above, the U.S. EPA believes most dischargers are capable of complying with new or revised discharge requirements within three years or less. Although this alternative is consistent with several CWA provisions, there are some facilities that would require more than three years because of budget constraints, magnitude of new construction to improve treatment processes, and numerous other concerns. It does not appear that a 3-year compliance schedule may be lengthy enough for many facilities.

**Alternative 3.** Adopt a compliance schedule of up to 10 years from the date of adoption of the proposed Policy for implementing the CTR criteria. The Central Valley RWQCB and the San Francisco Bay RWQCB consider 10 years to be sufficient time to accommodate a variety of compliance challenges ranging from simple source control identification and implementation to extensive treatment options. This alternative is consistent with compliance schedule provisions adopted in the rescinded ISWP and EBEP, and the current San Francisco Bay and Central Valley basin plans.

**Alternative 4.** Adopt a compliance schedule of up to 15 years from the date of adoption of the proposed Policy for implementing the CTR criteria. The U.S. EPA has generally regarded 5 years as the appropriate maximum limit for compliance schedules. The U.S. EPA also established a 5-year maximum limit in the Great Lakes Guidance (U.S. EPA 1995). Because California is the last state in the nation to have a comprehensive set of criteria for priority pollutants, there has already been a substantial delay in compliance with CWA §303(c)(2)(B). Because of these considerations, it is unlikely that this alternative, which is the recommendation of the Permitting and Compliance Issues Task Force, would be favorably considered by U.S. EPA without substantial justification.

### **IV. STAFF RECOMMENDATION**

Adopt Alternative 3.

## **CHAPTER 2.2 INTERIM REQUIREMENTS**

### **I. PRESENT STATE POLICY**

Interim requirements can be included in WDRs if a compliance schedule is authorized in an applicable controlling plan or policy (see Chapter 2.1 for further discussion). A compliance schedule is a timetable of interim dates for implementing actions required to comply with effluent limitations based on water quality standards. These actions, referred to in this chapter as interim requirements, may include interim effluent limitations, source control measures, monitoring requirements, requirements to participate in TMDLs, facility expansion, or changes in the plant processes.

State regulations allow the inclusion of a compliance schedule in WDRs that are not NPDES permits (CCR, Title 23, §2231). These regulations state that: (a) time schedules should be included in requirements for existing discharges when it appears that the discharger cannot immediately meet the requirements; (b) time schedules shall not permit any unnecessary time lag, and periodic status reports should be required; (c) time schedules should include dates for complete design, complete financial arrangements, start of construction, 50 percent completion of work, and full compliance with requirements; and (d) time schedules should be periodically reviewed and should be updated, when necessary, to ensure the most rapid compliance. These regulations do not specify which interim actions are appropriate for certain situations or how interim limitations should be calculated.

Presently, there is no statewide policy allowing compliance schedules in NPDES permits, however, the San Francisco Bay Basin Plan and the Central Valley Basin Plan authorize compliance schedules in NPDES permits. The remaining RWQCBs have not specifically allowed compliance schedules in their basin plans, and immediate compliance with water quality-based effluent limitations is, therefore, required for NPDES dischargers in these regions. However, under the California Water Code, compliance schedules and interim requirements may, nonetheless, be imposed in enforcement orders, such as cease and desist orders (Water Code §13301).

Where compliance schedules have been allowed in NPDES permits by the RWQCBs, Federal NPDES regulations (40 CFR 122.47), which apply in California (CCR, Title 23, §2235.2), provide that when a compliance schedule exceeds one year from the permit issuance date, interim requirements and dates for their achievement must be included in the compliance schedule, with no more than one year between interim dates. If an interim requirement is not readily divisible into stages for completion, the compliance schedule must include interim dates for the submission of progress reports, in addition to the final projected completion date. The compliance schedule must state that the discharger must notify the Director, in writing, no later than 14 days following each interim or final compliance date of its compliance or non-compliance with the interim or final requirements (or must submit a progress report, if applicable). Furthermore, the interim requirements must not result in a violation of any applicable requirement of the CWA or the Porter-Cologne Water Quality Control Act.

In addition, the San Francisco Bay Basin Plan states that compliance schedules and interim requirements may be authorized only under certain conditions, with the primary goal of promoting the completion of source control and waste minimization measures, including water reclamation. Interim requirements can only be considered where revised water quality-based effluent limitations are not currently met and where justified.

The Central Valley Basin Plan authorizes compliance schedules containing interim requirements where the RWQCB determines that it is infeasible for a discharger to comply with adopted water quality objectives or criteria immediately.

## **II. ISSUE DESCRIPTION**

When a new or more stringent water quality standard is adopted, dischargers cannot always comply immediately with the effluent limitation established to meet the water quality standard. The dischargers may need to investigate the feasibility of building new facilities, changing treatment processes, implementing source control and waste reduction measures, conducting special studies, or pursuing alternative regulatory avenues. Implementation of selected measures to reduce pollutant loadings may take years and the outcome may be uncertain. In these situations, regulatory relief may be extended to dischargers by establishing a schedule of compliance in the WDR (see Chapter 2.1). A compliance schedule is a timetable of interim dates for implementing actions (interim requirements) necessary to comply with effluent limitations based on water quality standards.

Interim requirements may include interim effluent limitations, source control measures, monitoring requirements, requirements to participate in TMDLs, facility expansion, or changes in the plant processes. Reasonable progress toward meeting objectives or criteria can be shown by meeting the interim effluent limitations and other interim requirements. Interim limitations are enforceable effluent limitations (see Chapter 1.2 for discussion of effluent limitations) that are effective and enforceable between the date when the WDR is adopted and the date when compliance with final water quality-based effluent limitations is required. Although interim effluent limitations may not fully protect beneficial uses, they provide at least a limited protection of beneficial uses, until compliance with final water quality-based effluent limitations can be accomplished. Interim limitations are set at values somewhere between the effluent limitation contained in the existing WDR and the final effluent limitation in the reissued WDR.

Interim requirements, including interim limitations, may be based on performance, and may be appropriate in situations where a lack of data prevents the permit writer from determining whether a water quality-based effluent limitation is needed or where a water quality-based effluent limitation cannot be established because of insufficient data. Technology-based effluent limitations must always be met, as must other legal requirements, such as antidegradation and anti-backsliding provisions.

In 1994, the U.S. EPA published the Guidance for NPDES Permit Issuance to assist California permit writers (U.S. EPA 1994). This document includes recommendations for establishing interim effluent limitations. Where discharges meet existing effluent limitations,

these values may be specified as interim limitations in the reissued permit as the most lenient values permissible. Where discharges are not in compliance with existing effluent limitations, the noncompliance under the existing permit must be addressed through appropriate enforcement action before the permit can be reissued, unless antibacksliding requirements are met. Where effluent data are available, interim limitations based on facility performance should be included in the reissued permit.

This U.S. EPA guidance also recommends that, where insufficient data prevents the RWQCB from determining whether a water quality-based effluent limitation is necessary for a pollutant in the discharge (see Chapter 1.1 for further discussion), effluent monitoring could be included as a condition of the reissued permit. A final water quality-based effluent limitation is not necessary in this situation, but the permit should include a reopener clause (see Federal regulations at 40 CFR 122.44(c)) allowing for the establishment of a water quality-based effluent limitation if the monitoring data show a need.

The Permitting and Compliance Issues Task Force made many recommendations on the establishment of interim requirements. The task force differentiated between numeric interim requirements, interim requirements to reduce pollutants in the waste stream (such as source control measures and best management practices), and interim requirements to participate in monitoring studies (such as TMDL studies and translator studies). The task force recommended that any WDR containing interim permit requirements (such as requiring the discharger to monitor further) also contain a time schedule, if appropriate, for completion of and compliance with these interim requirements.

The task force found that interim requirements could be appropriate in the following situations:

- a. Available data are insufficient to determine whether effluent limitations are needed to control a pollutant in a discharge (see Chapter 1.1). In this situation, the task force recommended that numeric interim limitations and source control measures not be imposed for a pollutant, but that the RWQCB instead require the discharger to monitor and gather further information.
- b. The RWQCB has determined that effluent limitations are needed to control a pollutant in a discharge, but effluent limitations cannot be calculated due to lack of data (see Chapter 1.2). In this situation, the task force recommended that numeric interim limitations be established in the WDR. This situation may arise because one of the following activities has not yet been completed:
  - a dynamic modeling study;
  - a translator study (see Chapter 1.2.1 and Chapter 6);
  - a TMDL (see Chapter 5.4 and Chapter 6);
  - a watershed management plan (see Chapter 5.4 and Chapter 6);
  - a site-specific objective study (see Chapter 5.3 and Chapter 6);
  - a use-attainability analysis (see Chapter 6).

The task force recommended that, in the above situations, the RWQCB may also impose interim requirements, such as requiring the discharger to participate in the activities necessary to develop final effluent limitations and implementing source control measures.

- c. The RWQCB has determined that effluent limitations are needed to control a pollutant in a discharge, and effluent limitations have been calculated, but the discharger cannot immediately meet those limitations. In this situation, the task force recommended that numeric interim limitations be placed in the WDR. The RWQCB may also impose interim requirements to control the pollutant, such as requiring the discharger to implement source control measures.

In cases (b) and (c) above, where a numeric interim effluent limitation is placed in the WDR, a final effluent limitation would only be included in the permit provisions if the final limitation can be achieved within the term of the WDR or if the compliance deadline falls within the term of the WDR. Once the final limitation becomes effective, the interim limitation would no longer apply. Where final limitations are not included in the permit provisions, the task force recommended that the permit findings include the following statements, where applicable:

- the water quality criterion to be achieved;
- the reason that a final water quality-based effluent limitation is not being incorporated into the WDR as an enforceable limit at this time;
- a schedule for development of a final water quality-based effluent limitation;
- a statement that it is the intent of the RWQCB to include the final water quality-based effluent limitation as an enforceable limitation in a subsequent permit revision, and that (unless the final limitation has already been developed) the final water quality-based effluent limitation will either be based on the water quality criterion itself or dictated by future regulatory developments; and
- a statement that the water body has previously been identified as impaired.

The task force recommended that numeric interim limitations be calculated by multiplying an estimated maximum effluent concentration by a factor (future factor) that would account for unforeseen and uncontrollable circumstances that could cause a future increase in effluent concentrations. The future factor would be calculated considering the magnitude of the estimated maximum effluent concentration, and the difference between the estimated maximum effluent concentration and the reporting level (see Chapter 2.4 for further discussion of reporting levels). The task force recommended that an acceptable range (e.g., 1.15 to 2.00) be identified and that the potential for using a statistical method to establish an uncertainty



factor be investigated.<sup>1</sup> The estimated maximum effluent concentration would be calculated using statistical procedures described in the TSD, or by using other statistical methods deemed appropriate by the SWRCB.

According to the task force, the estimated maximum effluent concentration would serve as a trigger level for initiation of corrective actions. Exceedances (defined in Appendix B) above the estimated maximum effluent concentration would result in a requirement that the discharger investigate and report the cause to the RWQCB. The RWQCB could also require that an action plan be submitted requiring the discharger to take all reasonable steps within a reasonable time to identify the cause of the exceedance and reduce pollutant levels to historic values. The permit provisions would include the estimated maximum effluent limitation and specify the actions to be taken if exceedances occur. Exceedance of the numeric interim limitation would result in appropriate enforcement actions by the RWQCB. In addition, the permit provisions would also include any other interim requirements and, if appropriate, interim dates.

The following alternatives have been developed based on the recommendations by the Permitting and Compliance Issues Task Force, and State and Federal requirements.

### **III. ALTERNATIVES FOR SWRCB ACTION**

**Alternative 1. No action.** Under this alternative, interim requirements, including interim limitations, would continue to be established at the discretion of the individual RWQCBs, consistent with the existing regulations governing compliance schedules.

**Alternative 2. Adopt the task force recommendation for establishing interim requirements.** Under this alternative, RWQCBs may determine that interim requirements (which may include numeric interim effluent limitations, pollutant control measures, and participation in monitoring studies) be placed in a WDR in addition to, or in lieu of, final water quality-based effluent limitations if certain conditions are met. These conditions and the corresponding appropriate interim requirements are described below:

- a. If available data are insufficient to determine whether effluent limitations are needed to control a pollutant in a discharge as described in Chapter 1.1, the RWQCB would not impose numeric interim limitations and source control measures for the pollutant, but would instead require the discharger to monitor and gather further information as an interim requirement. Final effluent limitations would not be included in the WDR for the pollutant.
- b. If the RWQCB determines that effluent limitations are needed to control a pollutant in a discharge, but effluent limitations could not be calculated as described in Chapter 1.2 due to lack of data (e.g., because a translator study had not yet been completed), the

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<sup>1</sup> SWRCB staff explored the possibility of using a statistical method for establishing a future factor, and concluded that future unforeseen events cannot be predicted.

RWQCB would require that numeric interim limitations be established in the WDR and could also impose interim requirements, such as requiring the discharger to implement source control measures and participate in the activities necessary to develop final effluent limitations.

- c. If the RWQCB determines that effluent limitations are needed to control a pollutant in a discharge, and effluent limitations have been calculated, but the discharger cannot immediately meet those limitations, the RWQCB would require that numeric interim limitations be established in the WDR and could also impose interim requirements to control the pollutant, such as requiring the discharger to implement source control measures.

In all three cases, final effluent limitations would only be included in the permit provisions if the final limitation could be achieved within the term of the WDR or if the compliance deadline fell within the term of the WDR. Once the final limitation became effective, the interim limitation would no longer apply.

Where final limitations were not included in the permit provisions, the permit findings must include the following statements, where applicable:

- the water quality criterion to be achieved;
- the reason that a final water quality-based effluent limitation is not being incorporated into the WDR as an enforceable limit at this time;
- a schedule for development of a final water quality-based effluent limitation;
- a statement that it is the intent of the RWQCB to include the final water quality-based effluent limitation as an enforceable limitation in a subsequent permit revision, and that (unless the final limitation has already been developed) the final water quality-based effluent limitation will be based either on the water quality criterion itself or dictated by future regulatory developments; and
- a statement that the water body has previously been identified as impaired.

Numeric interim limitations would be calculated by multiplying an estimated maximum effluent concentration with a future factor. The estimated maximum effluent concentration would be calculated as the upper 99 percent confidence level of the 99th percentile of observed undiluted effluent concentrations using the following statistical procedure described in the Technical Support Document for Water-Quality-based Toxics Control (TSD).<sup>2</sup>

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<sup>2</sup> The Permitting and Compliance Task force recommended that the SWRCB use the statistical method described in the TSD or other method deemed appropriate by the SWRCB. SWRCB staff selected the 99 percent confidence level of the 99th percentile of observed undiluted effluent concentrations because it corresponds to the protective level selected for other issues (e.g., Chapter 1.2.3).

The coefficient of variation (CV) (defined in Appendix B) is found for the effluent data. For less than ten samples,<sup>3</sup> CV may be set equal to 0.6, or a higher, calculated value may be used. For ten or more samples, CV should be calculated as the estimated standard deviation (defined in Appendix B) divided by the arithmetic mean (defined in Appendix B) of the measured values. The uncertainty factor associated with the computed CV and the number of data points can be found in Table V-10 or may be calculated as follows:

1. Calculate the percentile (p) represented by the highest effluent concentration in the data set:

$$p = 0.01^{1/n}$$

where  $n$  is the number of samples.

2. Calculate the uncertainty factor:

$$\text{uncertainty factor} = \exp((2.326 - z_p) * (\ln(CV^2 + 1))^{0.5})$$

where  $z_p$  is the z-score associated with the probability  $p$ .

The uncertainty factor is multiplied by the maximum of the observed effluent concentrations. The result is the estimated maximum effluent concentration. The numeric interim limitation is found by multiplying the estimated maximum effluent concentration by the future factor. The future factor would be set between 1.15 and 2.00, taking into account the magnitude of the estimated maximum effluent concentration, and the difference between the estimated maximum effluent concentration and the reporting level.

The estimated maximum effluent concentration would serve as a trigger level for initiation of corrective actions. Exceedances above the estimated maximum effluent concentration would result in a requirement that the discharger investigate and report the cause to the RWQCB. The RWQCB could also require that an action plan be submitted requiring the discharger to take all reasonable steps within a reasonable time to identify the cause of the exceedance above the estimated maximum effluent limitation and reduce pollutant levels to historic values. Exceedance of the numeric interim limitation would result in appropriate enforcement actions by the RWQCB.

The permit provisions would include the interim effluent limitation, the estimated maximum effluent limitation, and other interim requirements. The permit provisions would also include a compliance schedule, if appropriate, and corrective actions to be taken if exceedances occur.

Although based on performance, numeric interim limitations developed under this alternative may, in some cases, be stricter than final effluent limitations because mixing zones are not considered in the calculation. If the numeric interim limitations are more stringent than the final effluent limitations, the discharger would not be able to meet the interim limitations. In most cases, numeric interim limitations developed under this alternative would be more lenient than existing effluent limitations due to the use of the future factor. The interim

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<sup>3</sup> Typical values for CV range from 0.2 to 1.2. A value of 0.6 is a relatively conservative estimate that may be used for CV when available data sets are small, and the uncertainty on the calculated standard deviation and arithmetic mean are, therefore, high (U.S. EPA 1991).

limitations would, therefore, not serve as an intermediate step between the existing effluent limitation and the final effluent limitation, and could violate anti-backsliding and anti-degradation requirements. Water quality may, under this scenario, degrade rather than improve.

Another disadvantage with using this method to calculate numeric interim limitations is the use of a future factor. The future factor is meant to provide for unforeseen and uncontrollable circumstances that may cause a future increase in effluent concentrations. However, accounting for unforeseen events is not possible. State and Federal regulations already contain some provisions for unforeseen and uncontrollable circumstances that may cause a future increase in effluent concentrations for a discharger. NPDES dischargers may request a permit modification based on new information if the discharge quantity or quality changes (40 CFR 122.62 (a)(2)).

This alternative would provide statewide consistency in establishing interim effluent limitations and requirements.

**Alternative 3.** Adopt a modified version of the task force recommendation for establishing interim requirements. Like Alternative 2, under this alternative, the RWQCBs may place interim requirements (which may include numeric interim limitations, pollutant control measures, and participation in monitoring studies) in a WDR in addition to, or instead of, final water quality-based effluent limitations if certain conditions are met. These conditions and the corresponding appropriate interim requirements are described below:

- a. If available data are insufficient to determine whether effluent limitations are needed to control a pollutant in a discharge as described in Chapter 1.1, the RWQCB would not impose numeric interim limitations and source control measures for the pollutant, but would instead require the discharger to monitor and gather further information as an interim requirement. The permit provisions would include a compliance schedule which contains the interim requirements and dates for their achievement, with no more than one year between interim dates. The compliance schedule must state that the discharger must notify the RWQCB, in writing, no later than 14 days following each interim compliance date, of its compliance or noncompliance with the interim requirements (or must submit a progress report, if applicable). When the interim requirements have been completed, the RWQCB would determine, based on the collected data, whether water quality-based effluent limitations would be needed to control the pollutant. If water quality-based effluent limitations are needed to control the pollutant, the WDR would be reopened for that pollutant and final effluent limitations included in the permit provisions, unless a compliance schedule and interim requirements were applicable under (b) and (c) below.
- b. If the RWQCB determines that effluent limitations are needed to control a pollutant in a discharge, but effluent limitations could not be calculated as described in Chapter 1.2 due to lack of data (e.g., because a translator study or a site-specific objective study has not yet been completed), the RWQCB would require that numeric interim limitations be established in the WDR and could also impose interim requirements,

such as requiring the discharger to implement source control measures and participate in the activities necessary to develop final effluent limitations. Where discharges meet existing effluent limitations, these values may be specified as numeric interim limitations in the reissued WDR as the most lenient values permissible, unless anti-backsliding provisions are met. Where discharges are not in compliance with existing effluent limitations, the noncompliance under the existing WDR must be addressed through appropriate enforcement action before the WDR can be reissued, unless antibacksliding provisions are met. Numeric interim limitations must be at least as stringent as the current performance level of the facility, unless antibacksliding provisions are met.

The permit provisions would include a compliance schedule which contains the interim requirements and dates for their achievement, with no more than one year between interim dates. The compliance schedule must state that the discharger must notify the RWQCB in writing no later than 14 days following each interim compliance date of its compliance or noncompliance with the interim requirements (or must submit a progress report, if applicable). Compliance schedules for translator studies are discussed in Chapter 1.2.1. Permit provisions should also state the appropriate enforcement actions to be taken by the RWQCB if interim requirements, including limitations, are not met.

Except as specifically provided in Chapter 1.2.1 (Translators for Metals and Selenium), the permit provisions would not include a final effluent limitation, but the permit findings should include: (1) the water quality criteria/objectives to be achieved; (2) the reason that a final water quality-based effluent limitation is not being incorporated into the WDR as an enforceable limitation at this time; (3) a statement that it is the intent of the RWQCB to include the final water quality-based effluent limitation as an enforceable limitation in a subsequent WDR revision, and that (unless the final limitation has already been developed) the final water quality-based effluent limitation will be based either on the water quality criterion itself or on future regulatory developments; and (4) a schedule for development of a final water quality-based effluent limitation. When the interim requirements have been completed, the RWQCB would reopen the WDR for that pollutant and calculate final water quality-based effluent limitations based on the collected information and include them in the permit provisions. Once the final limitation became effective, the interim limitation would no longer apply.

- c. If it has been determined that effluent limitations are needed to control a pollutant in a discharge, and effluent limitations have been calculated, but the discharger cannot immediately meet those limitations and the RWQCB determines that a compliance schedule is appropriate, the RWQCB would require that numeric interim limitations be established in the WDR and could also impose interim requirements to control the pollutant, such as requiring the discharger to implement source control measures. Numeric interim limitations and requirements would be established and included in the WDR as described in (b) above, except the final effluent limitations would be included in the permit findings if the compliance schedule exceeds the length of the WDR;

otherwise, the final effluent limitations will be included in the permit provisions along with any interim requirements.

In no event can a schedule of compliance included in a WDR exceed the deadline listed in Chapter 2.1.

This alternative will not cause further degradation of the water body, yet would allow dischargers the opportunity to find more cost-effective and environmentally friendly ways to meet requirements. Unlike Alternative 2, this alternative does not specify a method for calculating an interim effluent limitation, and therefore provides the RWQCBs a greater flexibility to determine an interim limitation appropriate to the facility-specific conditions and the type of actions required to meet the final effluent limitation. For example, source reduction measures may result in a gradual improvement of effluent quality, whereas a treatment plant expansion may result in a step-wise improvement of effluent quality. A prescriptive method for determining interim limitations may not provide enough flexibility in some cases and may be too lenient in other cases. This method would, however, provide statewide consistency in establishing interim requirements, including interim effluent limitations.

#### **IV. STAFF RECOMMENDATION**

Adopt Alternative 3.

### **CHAPTER 2.3 MONITORING AND REPORTING REQUIREMENTS**

#### **I. PRESENT STATE POLICY**

There is currently no statewide policy regarding monitoring and reporting requirements specifically for discharges into inland surface waters, enclosed bays or estuaries. However, State regulations address monitoring for both NPDES permits and WDRs. General monitoring and reporting requirements for discharges to ocean waters are contained in the 1997 Ocean Plan. The RWQCB basin plans specify surveillance, monitoring, and assessment provisions. These requirements are described below.

#### **II. ISSUE DESCRIPTION**

The RWQCBs have the authority to require dischargers to monitor and report pollutant levels as a part of NPDES permits and other waste discharge requirements (WDRs)(California Water Code §13267 and §13383). The information generated by the monitoring and reporting requirements of NPDES permits and WDRs is used to determine compliance with permit effluent limitations. Federal and State regulations specify monitoring requirements for NPDES permits and non-NPDES WDRs, respectively. These requirements are described below.

The U.S. EPA NPDES permit regulations, which are applicable in California (CCR, Title 23, §2235.1 and §2235.2), contain monitoring requirements to ensure compliance with permit effluent limitations. Monitoring and reporting conditions which apply to all NPDES permits are listed in 40 CFR 122.41. This section requires dischargers to maintain monitoring records, which include the date, exact place and time of sampling or measurements, the individual(s) who performed the sampling or measurements, the date(s) analyses were performed, the individual(s) who performed the analyses, the analytical techniques or methods used, and the results of such analyses. As further stated, "Monitoring results must be conducted according to test procedures approved under 40 CFR part 136 unless otherwise specified in 40 CFR part 503, unless other test procedures have been specified in the permits.". Permittees must retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for a permit, for a period of at least three years from the date of the sample, measurement, report, or application (five years or longer for sewage sludge activities).

Further, NPDES monitoring and reporting requirements are outlined in 40 CFR 122.48 and 122.44. NPDES permits must specify the following: (1) requirements concerning the proper use, maintenance, and installation, when appropriate, of monitoring equipment or methods (including biological monitoring methods when appropriate); (2) required monitoring, including type, intervals, and frequency sufficient to yield data which are representative of the monitored activity including, when appropriate, continuous monitoring; and (3) applicable reporting requirements based upon the impact of the regulated activity and as specified in 40 CFR 122.44.

In addition, 40 CFR 122.44 requires permittees to monitor: "(i) the mass (or other measurement specified in the permit) for each pollutant limited in the permit; (ii) the volume of effluent discharged from each outfall; (iii) other measurements as appropriate including pollutants in internal waste streams under §122.45(i); pollutants in intake water for net limitations under §122.45(f); frequency, rate of discharge, etc., for noncontinuous discharges under §122.45(e); pollutants subject to notification requirements under §122.42(a); and pollutants in sewage sludge or other monitoring as specified in 40 CFR part 503; or as determined to be necessary on a case-by-case basis pursuant to section 405(d)(4) of the Clean Water Act." Also, 40 CFR 122.44 requires reporting of monitoring results with a frequency dependent on the nature and effect of the discharge, but in no case less than once a year. For sewage sludge use or disposal practices, the section requires the monitoring and reporting of results with a frequency dependent on the nature and effect of the sewage sludge use or disposal practice. Minimally, this shall be as specified in 40 CFR 503 (where applicable), but in no case less than once a year. The Federal regulations do not specify QA/QC requirements for NPDES permits.

Like the federal NPDES regulations, state regulations governing non-NPDES WDRs require that monitoring results be reported no less than once a year (CCR, Title 23, §2230). Water Code §13176 requires that all environmental sample analyses be performed by a certified laboratory.

The RWQCBs ensure compliance with their basin plans, NPDES permits, and WDRs through implementation of "discharger self-monitoring" and "compliance monitoring". Dischargers are required to "self-monitor"; that is, to collect regular samples of their effluent and receiving (or ambient) waters according to a prescribed schedule to determine facility performance and compliance with their requirements. The self-monitoring data reported to the RWQCBs are submitted as a discharger monitoring report called a DMR. The RWQCBs use data from self-monitoring to determine compliance with requirements, issue enforcement orders, if appropriate, and perform water quality assessments. When the RWQCBs conduct "compliance monitoring", the RWQCBs make unannounced inspections and collect samples to determine compliance with discharge requirements and receiving water objectives, and gather data, if appropriate, for enforcement actions.

Nearly every monitoring program will require testing of the final effluent or wastewater discharge from the permitted facility or site. The nature and magnitude of the effluent monitoring requirements will depend primarily on the volume of the discharge, the frequency of the discharge, and the type of wastewater discharged. A receiving water monitoring program may not be needed for every discharge. For many minor dischargers, effluent monitoring may be sufficient. However, most major dischargers will be required to conduct receiving water monitoring in addition to effluent monitoring. The type of receiving water is considered in establishing monitoring requirements. Discharges to inland waters usually occur as an end-of-pipe discharge to a stream or river, or sometimes to a lake, environment. Consideration of the flow regime of inland waters is important in the selection of monitoring requirements. Discharges to estuarine waters may occur in a variety of ways. Some discharges may enter an estuary at or near the shoreline as an end-of-pipe discharge, while other discharges may occur offshore as an end-of-pipe discharge or through a diffuser system. Consideration of current patterns, initial dilution, and dispersal of the wastewater plume are important factors in the selection of monitoring requirements.

In addition to the use of data generated from monitoring required in WDRs, the RWQCBs review data generated from comprehensive surveillance and monitoring programs to assess compliance. The surveillance and monitoring programs include the SWRCB's Toxic Substances Monitoring, State Mussel Watch, and Bay Protection and Toxic Cleanup programs, as well as cooperative regional monitoring programs such as the Interagency Ecological Program. The data from the surveillance and monitoring programs are used to identify pollutant sources, establish baseline and trends, and assess the effectiveness of the RWQCBs water quality control programs.

The Permitting and Compliance Issues Task force and, to a lesser extent, other ISWP/EBEP public advisory task forces made numerous recommendations on monitoring and reporting requirements. The common goal among all of the task force recommendations is the desire to reduce costs, avoid duplication, and promote coordination, effectiveness, and efficiency in establishing monitoring requirements. Several of the task force recommendations (e.g., providing data for establishing baselines/trends, and for developing TMDLs/WLAs/LAs, site-specific objectives, and metal translators) are actions that are currently being taken by the SWRCB and RWQCBs. Many of the task force recommendations, specifically those pertaining to certain provisions that should be included in WDRs, will be addressed in the



policy. However, the task force recommendation requesting that some effluent monitoring be substituted with ambient biological assessment or indicator monitoring will be deferred to later statewide plan amendments. Biological assessment and indicator monitoring techniques are in the primary stages of development. The recommendations involving defining statistical procedures and standardized reporting are best addressed in a guidance document to be developed independently of the policy. Some of the task force recommendations encouraged coordination and facilitation of cooperative water body, watershed, regional, and discharge monitoring while considering costs and benefits, and allocating responsibility for performing and funding the monitoring.

### **III. ALTERNATIVES FOR SWRCB ACTION**

**Alternative 1.** No action. Under this alternative, RWQCBs will continue to rely on their own basin plan provisions, and State and Federal regulations, for establishing monitoring and reporting requirements in WDRs. Further refinement or development of monitoring and reporting requirements would be done through individual RWQCB basin plan amendments. This alternative does not address statewide consistency.

**Alternative 2.** Adopt general policy language on monitoring and reporting requirements. This alternative would establish general requirements for monitoring and reporting requirements used to determine compliance with the priority pollutant criteria and effluent limitations based on those criteria. The proposed policy language would address many of the task force concerns regarding monitoring and reporting requirements, and complement existing basin plan requirements. This alternative would address statewide consistency on a general level.

**Alternative 3.** Adopt specific guidance on monitoring and reporting requirements. This alternative, which addresses additional task force recommendations, would require significant efforts in developing a guidance document that would specify how the data will be used to determine compliance with effluent limitations and water quality objectives, establish a standardized format for reporting of monitoring data, define options for statistical procedures for evaluating monitoring data, and specify laboratory certification procedures. This alternative would require extensive time and coordination among the SWRCB and the RWQCBs.

### **IV. STAFF RECOMMENDATION**

Adopt Alternative 2.

## CHAPTER 2.4 REPORTING LEVELS

### I. PRESENT STATE POLICY

The only statewide plan or policy in effect for regulating discharges of toxic substances to surface waters is the Ocean Plan. Reporting levels and compliance determinations in that plan are based on Practical Quantitation Levels (PQLs). In the absence of laboratory performance data, reporting levels are based on Method Detection Limits (MDLs). These terms are defined in the 1997 Ocean Plan as follows:

**PQL:** The lowest concentration of a substance which can be consistently determined within +/-20% of the true concentration by 75% of the labs tested in a performance evaluation study. Alternatively, if performance data are not available, the PQL for carcinogens is the MDL x 5, and for noncarcinogens is the MDL x 10.

**MDL:** The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero, as defined in 40 CFR 136 Appendix B.

RWQCB basin plans do not contain provisions for reporting levels. The RWQCBs use various approaches, including that described in the Ocean Plan and other approaches in consultation with the U.S. EPA. The rescinded Inland Surface Waters Plan and the Enclosed Bays and Estuaries Plan used the same approach for reporting levels as the Ocean Plan. The Chemical Specifics Objectives Task Force drew attention to the "moving target" aspect of current reporting levels, and indicated that this issue must be addressed in the new plans.

### II. ISSUE DESCRIPTION

A reporting level is the lowest concentration of a detected substance that must be reported for specific regulatory purposes, such as determining compliance with effluent limitations and water quality criteria or objectives. Reporting levels become a problem when analytical methods are improved to detect the presence of regulated chemical substances that were previously reported as not detected. This downward shift in detection level has been referred to as a "moving target". Thus, it is possible that effluent limitations or water quality criteria/objectives at concentrations that are not currently detected<sup>1</sup> (or detected with

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<sup>1</sup> Chemical carcinogens are examples of substances whose water quality objectives are established at often undetectable concentrations. The laboratory experiments performed on potential carcinogens to determine if they are carcinogens and, if so, their corresponding potency, are usually conducted at high concentrations to produce statistically significant results within the time frame of the experiment. When substances are shown to be carcinogenic, any follow-on regulatory action that would result in establishing a water quality objective would take into account the individual substance's carcinogenic potency, bioaccumulation potential, seafood consumption rate, and regulatory risk (e.g., one increased cancer

reliability), and are deemed in compliance, may be later found to be unattained with the ability to detect and quantify lower concentrations.

The most efficient way to evaluate these new improvements and detections is to develop sound data over a period of time to determine their accuracy and feasibility for statewide application. Recommendations for regulatory changes or actions should be based on these considerations at the end of each triennial review, or earlier if the issue were deemed significant enough.

Further, regulators and dischargers both want assurance that reporting levels are of known precision and accuracy. This assurance can be given if the amount detected and quantified is in the calibration range<sup>2</sup> of the analytical method. The reporting level could be as low as the lowest concentration in this range.

As reporting levels, PQLs are somewhat problematic. First, the PQL has several definitions, including two that have been developed by different offices within the U.S. EPA. Second, data have not been developed by U.S. EPA to determine the PQLs for the priority pollutants.

The use of the MDL as a reporting level or as the basis for calculating a reporting level (i.e., PQL), also can present problems. It is statistically derived and a substance at this concentration is frequently not detectable or quantifiable with a known level of accuracy. (This statement will become clearer in the discussion which follows).

Further, in the Supplemental Information Document for the Final Water Quality Guidance for the Great Lakes System, (Pages 419 and 420), U.S. EPA rejected both the MDL and PQL for reporting purposes, as follows:

“EPA rejected the use of the MDL and other non-quantifiable concentration levels because these concentrations, by definition, do not represent concentrations that are both reproducible and quantifiable indicators ... hence are not reliable measures for permit compliance purposes.”

“Since the EPA is actively reevaluating its use of the traditional PQL values, EPA does not endorse them for evaluating compliance ...”

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incidence in one million population). All of these factors would be used collectively to derive an estimated "safe" concentration (e.g. water quality objective) for human populations based on the toxic responses measured in laboratory tests (usually involving small mammals). The combination of these factors can result in water quality objectives that are set at very low (and undetectable) concentrations in order to adequately protect human health.

<sup>2</sup> The calibration range is that region where instrument responses to individual substances detected are proportional to the actual concentration of substance being measured.

The Final Water Quality Guidance for the Great Lakes System (40 CFR, Part 132) contains a definition for a reporting level that meets the criteria above: (1) that it be of known precision and accuracy; (2) that it lie within the calibration range of the analytical method; and (3) that it be the lowest concentration in this range necessary to determine compliance with criteria/objectives. The term used in the guidance is Minimum Level (ML) and it is defined by the U.S. EPA as follows:

"...the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure...."

By this definition, a reporting level would not be established for any detectable concentration between the first detectable instrument signal and the response just below the lowest point on the line of calibration. Instead, the reporting level would be established at the lowest point

on the line of calibration. The reason for this is that the variability of the earliest recognizable signals is greater than the precision required for acceptable quantification. This is also the region where the MDL appears, and why it is not acceptable as a reporting level. The MDL is based on detection alone without regard to acceptable quantification criteria.

The U.S. EPA allows states to establish appropriate statistical procedures for handling situations where the concentration of a regulated substance is below the ML, but above the MDL. Since any concentration in this region is of lesser quality (in terms of precision and accuracy) there cannot be a reliance on single sample measurements for compliance purposes. A proper procedure would be replicate measurements and the computation of a mean and confidence interval. There are several possible procedures, which vary in the number of replicates used, whether the mean is arithmetic or geometric, and whether the confidence interval is at the 95th or 99th percent level (approximately equal to 2 or 3 times the standard deviation, respectively). In addition, any procedure needs to address the existence of any measurements below the MDL and its effect on the computation of the mean and confidence interval.

The SWRCB conducted a statewide survey requesting ML values for the priority pollutants based on existing laboratory data relative to the lowest routine calibration standard employed by the laboratory in combination with the analytical method for the substance. The collected data for each substance were evaluated and a technic-specific ML value determined. In many cases, most notably for trace metals, there were significant differences between each substance's technic-specific ML value.

Owing to this spread of ML values, RWQCBs will have to be instructed on the selection of allowed analytical methods for each permit. The relationship between the various ML values for a substance and its calculated effluent limitation will determine if a RWQCB will have to restrict the discharger's access to an analytical method. The degree of restriction, and its subsequent impact on compliance costs, vary with each calculated permit limit and the spread of ML values.

To increase assurances that water quality is being protected, the lowest accurate analytical data needed to determine compliance must be used. It is possible that there will be cases where the lowest ML value for a given substance still will be higher than the calculated effluent limitation. In those cases, water quality protection issues demand that a RWQCB restrict the discharger to the one technic with the lowest ML value. There are possible significant difficulties for the dischargers in that the one available method is not widely available and the discharger may also incur increased analytical costs. However, to allow the discharger access to a analytical method that is more readily available, less costly, but with a higher ML value will impede the State's protection of water quality.

There are 38 priority pollutants which have a water quality criterion/objective that is below the lowest cited ML value for the substance based on the SWRCB's recent ML Survey. The

extent to which the water quality criterion/objective differs from the lowest ML is given in the following table:

<u>Substance Grouping</u>	<u>#</u>	<u>Ratio of ML/criterion</u>
Volatile Organics	6	2 times to 4 times
Cyanide	1	6 times
Pesticides/PCBs	9	10 times to 10,000 times
Semi-volatile Organics	17	1.5 times to 10,000 times
Metals	5	2 times to 400 times

Due to a lack of ML data, this listing does not include: dioxins/furans, trivalent chromium, and asbestos.

The SWRCB and U.S. EPA recognize that many of the priority pollutants cause unacceptable toxic effects at very low ambient concentrations. Therefore, established water quality criteria are, in many instances, below levels of reliable detection and quantitation using currently required methods of analysis. The U.S. EPA is interested in innovative analytical techniques capable of accurately measuring pollutants at or near water quality criteria levels. As new methods are developed, the U.S. EPA is conducting validation studies to determine method detection limits and other method performance attributes. Once the validation studies are completed, the U.S. EPA intends to propose the analytical methods at 40 CFR Part 136 for use in compliance monitoring. These new methods will provide permitting authorities, permittees, and other interested parties with the analytical capabilities to measure pollutants at water quality criteria levels.

The U.S. EPA has established priorities for the development and validation of analytical methods for priority pollutants. Several analytical methods have been developed for the determination of trace metals (e.g., arsenic, antimony, cadmium, copper, trivalent and hexavalent chromium, lead, mercury, nickel, selenium, silver, thallium, and zinc). These methods have undergone single-laboratory validation studies to investigate their capability to measure the trace metals at or near water quality criteria levels. The U.S. EPA plans to conduct an inter-laboratory collaborative validation study prior to proposal of these methods, which is anticipated in 1998.

In the past, research by the U.S. EPA, U.S. Geological Survey, and others have shown that measurement of trace metals at water quality criteria levels requires extensive precautions to preclude false positives that arise from contamination during sample collection, handling and analysis. To ensure that metals data accurately reflect the actual concentrations of the water body sampled, the U.S. EPA has developed three guidance documents that accompany the trace metals methods.

The U.S. EPA has developed and validated a method that extends the minimum levels of quantitation for dioxins and furans into the low ppq range (Method 1613). The U.S. EPA plans to promulgate this method at 40 CFR Part 136 in the near future. The U.S. EPA also

has developed a method (Method 1668) for determination of 13 PCB congeners that the World Health Organization (WHO) has identified as having toxic properties similar to the dioxins and furans. Method 1668 allows for determination of all the 13 "toxic" PCB congeners in the low ppq range. This method is also applicable to other PCB congeners not specified by WHO as "toxic." A collaborative validation study is planned for this method and should be completed in 1998.

The U.S. EPA also plans to revise currently approved analytical methods for volatile organics (Method 1624) and for semi-volatiles and some pesticides (Method 1625). Improvements on these and other analytical methods will be conducted in the future as the technology develops and resources become available.

### **III. ALTERNATIVES FOR SWRCB ACTION**

**Alternative 1. No action.** If no new requirements for reporting levels are described in the implementation policy, then RWQCBs will continue to accept analytical data according to current discharge permit requirements. These requirements vary from region to region. Even within a region, reporting levels may not be consistent from one discharger to the next because dischargers interpret the reporting level requirements differently.

**Alternative 2. Require that the reporting level be the PQL or MDL.** The specific approach taken would be determined by the amount of available laboratory performance data. Use of the PQL presents several problems. As noted above, the term has more than one definition and there is no agreement as to which is preferred. The definition used in the Ocean Plan was based on a U.S. EPA definition and was considered appropriate for use at the time it was adopted in 1990. However, the U.S. EPA has not developed the interlaboratory data necessary to identify a PQL for each of the priority pollutants. Also, the use of this reporting level has fallen somewhat into disfavor because of the lack of these data.

The MDL has an inherent problem in its definition. It is based on the lowest concentration above zero that can be detected with 99% confidence, a value too low to be reliably quantified.

**Alternative 3. Require that the reporting level be the ML.** Under this alternative, MLs would be listed in the Policy, and the Policy would recognize that (1) analytical detection capability will improve over time, which would allow for lowering of reporting levels, and (2) there is a need to collaboratively test these new detection capabilities before new reporting levels and, subsequently, effluent limitations are established.

This alternative meets the goal that acceptable reporting levels must be based on the lowest concentrations that can be measured by laboratories within known levels of precision and accuracy. Further, ML concentrations are routinely established by laboratories, which means that this information is readily available and would not require a special interlaboratory performance study.

In order to determine ML values for each substance, the SWRCB's Quality Assurance Program conducted an ML study in 1997. This study requested existing laboratory data relative to the lowest routine calibration standard employed by the laboratory in combination with the analytical method for the substance. These ML values are presently being compiled and verified, and will soon be made public in a supplementary document.

In situations where the concentration of a regulated substance falls below the ML, but above the MDL for that substance, the RWQCB would stipulate multiple analyses of each sample followed by computation of a selected mean and confidence interval from the analytical results.

#### **IV. STAFF RECOMMENDATION**

Adopt Alternative 3.